Maryland Historical Trust

Maryland Inventory of Historic Properties number: AC-II-A-148 AL-II-A-043

Name: MD 144 over Flintstone Creek

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended ___X___ Eligibility Not Recommended _____

Criteria: ___A ___B X C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G __None

Comments: _____

_____

_____

Reviewer, OPS: Anne E. Bruder Date: 3 April 2001

Reviewer, NR Program: Peter E. Kurtze Date: 3 April 2001

AL-II-A-043

MARYLAND INVENTORY OF HISTORIC BRIDGES **MHT No.** ~~AL-II-A-148~~
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

SHA Bridge No. 1033 **Bridge name** MD 144 (National Pike) over Flintstone Creek

LOCATION:
Street/Road name and number [facility carried] MD 144 (National Pike)

City/town Flintstone **Vicinity** _____

County Allegany

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State X **County** _____ **Municipal** _____ **Other** _____

HISTORIC STATUS:
Is the bridge located within a designated historic district? Yes _____ **No** X
National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** _____

Name of district _____

BRIDGE TYPE:
Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ____ **Timber-And-Concrete** ___

Stone Arch Bridge _____

Metal Truss Bridge _____

Movable Bridge _____:
Swing _____ **Bascule Single Leaf** __ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder_____:
Rolled Girder _____ **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete X:
Concrete Arch X **Concrete Slab**_____ **Concrete Beam** ____ **Rigid Frame** _____
Other X **Type Name** Brick Masonry Arch

DESCRIPTION:

Setting: Urban _____ **Small town** ____X____ **Rural** _____

Describe Setting:

Bridge 1033 carries MD 144 (National Pike) over Flintstone Creek in Allegany County. MD 144 (National Pike) runs east-west and Flintstone Creek flows north to south. The bridge is located in the vicinity of Flintstone, and is surrounded by late-nineteenth century homes.

Describe Superstructure and Substructure:

Bridge 1033 is a 1-span, 2-lane, brick masonry filled arch bridge with concrete spandrel walls. The bridge was originally built in 1900, and was widened with a closed concrete arch section in 1925. The structure is 14.6 meters (48 feet) long and has a clear roadway width of 7.3 meters (24 feet); there is a sidewalk on the north side of the bridge. It is supported with a concrete slab added after 1985. The bridge was widened from 6.0 meters (19.75 feet) to 8.3 meters (27.2 feet). The superstructure consists of one arch which supports a cast-in-place concrete deck and concrete parapets. The arch spans 14 meters (46 feet) and is topped by pierced concrete parapets. The substructure consists of two stone abutments. There are four reinforced concrete wingwalls with gabion baskets. The bridge has a sufficiency rating of 84.9.

According to the 1997 inspection report, this structure was in good condition with some cracks and missing mortar. The brick arch, concrete abutments and wingwalls have small amounts of mortar missing. The concrete spandrel wall has fine irregular cracks with light efflorescence. Also, the reinforced concrete parapets have medium scaling, fine vertical cracks and medium size areas of delamination with small spalls along the curb line.

Discuss Major Alterations:

The bridge was originally built in 1900, and was widened with a concrete arch in 1925. A gabion wall was designed to protect the southeast abutment slope in 1985. A concrete slab section carrying a sidewalk was added to the north wall after 1985.

HISTORY:

WHEN was the bridge built: 1900, 1925
This date is: Actual _____X_____ **Estimated** _____
Source of date: Plaque _____ **Design plans** ____ **County bridge files/inspection form** ____
Other (specify): State Highway Administration Inspection Report/Bridge Files

WHY was the bridge built?

The bridge was constructed in response to the need for more efficient transportation network and increased load capacity.

WHO was the designer?

State Roads Commission-1925

WHO was the builder?

State Roads Commission-1925

WHY was the bridge altered?

The bridge was widened to increase road capacity.

Was this bridge built as part of an organized bridge-building campaign?

This bridge was widened as part of the improvements to the National Pike in the mid-1920s.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character ____X____

The bridge is eligible for the National Register of Historic Places under Criterion C, as a significant example of concrete arch construction. The structure has a high degree of integrity and retains such character-defining elements of the type as concrete spandrel walls, parapets, abutments, and wingwalls. It is an unusual example of a brick masonry arch that was widened with a concrete arch section.

Was the bridge constructed in response to significant events in Maryland or local history?

The advent of modern concrete technology fostered a renaissance of arch bridge construction in the United States. Reinforced concrete allowed the arch bridge to be constructed with much more ease than ever before and maintained the load-bearing capabilities of the form. As the structural advantages of reinforced concrete became apparent, the heavy, filled barrel of the arch was lightened into ribs. Spandrel walls were opened, to give a lighter appearance and to decrease dead load. This enabled the concrete arch to become flatter and multi-centered, with longer spans possible. Designers were no longer limited to the semicircular or segmental arch form of the stone arch bridge. The versatility of reinforced concrete permitted development of a variety of economical bridges for use on roads crossing small streams and rivers.

Maryland's roads and bridge improvement programs mirrored economic cycles. The first road improvement of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916-1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920-1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic , with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the State issued a bond of $3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund (with an equal sum from the counties) the building of lateral roads.

The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had been inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930's.

As the nation's automotive traffic increased in the early twentieth century, local road networks were consolidated, and state highway departments were formed to supervise the construction and improvement of state roads. With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction through the standardization of bridge designs.

The concept and practice of standardization was one of the most important developments in engineering of the twentieth century. In Maryland, as in the rest of the nation, the standardized concrete types became the predominant bridge types built. In the period 1911 to 1920 (the decade in which standardized plans were introduced), beams and slabs constituted 65 percent and arches 35 percent of the extant 29 bridges built in Maryland during this period. In the following decade, 1921-1930, the beam (now the T-beam) and slab increased to 73 percent and the arch had declined to 27 percent of the 129 extant bridges; in the next decade (1931-1940), the beam and slab achieved 82 percent and arches had further declined, constituting only 18 percent of the total of extant bridges built on state-owned roads between 1931 and 1946.

Although beam and slab bridges became the utilitarian choice, it appears that the arch was selected when aesthetic as well as other site conditions were considered. The architectural treatment of extant arch bridges supports this assessment. Many of these bridges were multiple span structures with open spandrels or masonry facing. Another decorative feature of the concrete arch bridge was an open, balustrade-style parapet. Despite the popularity of ornamental arches and the increase in use of beam and slab bridges, examples of simpler, single and multiple span closed concrete arch bridges with solid parapets continued to be constructed throughout the early twentieth century.

The National Pike (MD 144) between Hancock and Cumberland was originally chartered in 1792 by Maryland as a turnpike from Frederick to Cumberland. The road was financed by various Maryland banks, and construction began in 1816, reaching Cumberland and the National Road in 1821. The turnpike ceased operations in 1889 when a storm wrecked bridges on the road, and the bridges were not rebuilt. The road had fallen into disrepair by the early twentieth century, when the "Good Roads" Act of 1916 provided federal funding for road improvements. The National Pike was designated U.S. 40 in the mid-1920s and renamed Maryland 144 when the dual highway route of U.S. 40 was constructed in the mid-1950s.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

This bridge is located in an area which may be eligible for historic designation. It is surrounded by late-nineteenth century residences, and the bridge would add to the historic and visual character of the potential district.

Is the bridge a significant example of its type?

The bridge is a good example of the State Roads Commission standard 1920s bridge plan. It is also an unusual example of an early brick masonry arch that was later widened with a concrete arch.

Does the bridge retain integrity of important elements described in Context Addendum?

The bridge retains the character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including concrete spandrel walls, pierced concrete parapets, and reinforced concrete wingwalls, however some deterioration is evident. The brick arch and stone wingwalls make this an unusual example of a masonry bridge widened with a concrete section. The concrete slab sidewalk does not significantly impact the integrity of the bridge as it is on the outside of the bridge.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is a significant example of the work of the State Roads Commission in the 1920s.

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files _____ **SHA inspection/bridge files** X
Other (list): _____

Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland*. Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

P.A.C. Spero & Company and Louis Berger & Associates
1995 Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report. Maryland State Highway Administration, Maryland State Department of Transportation, Baltimore, Maryland.

Raitz, Karl. ed.
1996 The National Road. The Johns Hopkins University Press, Baltimore and London.

State Roads Commission
1958 A History of Road Building in Maryland. Published by author, Baltimore.

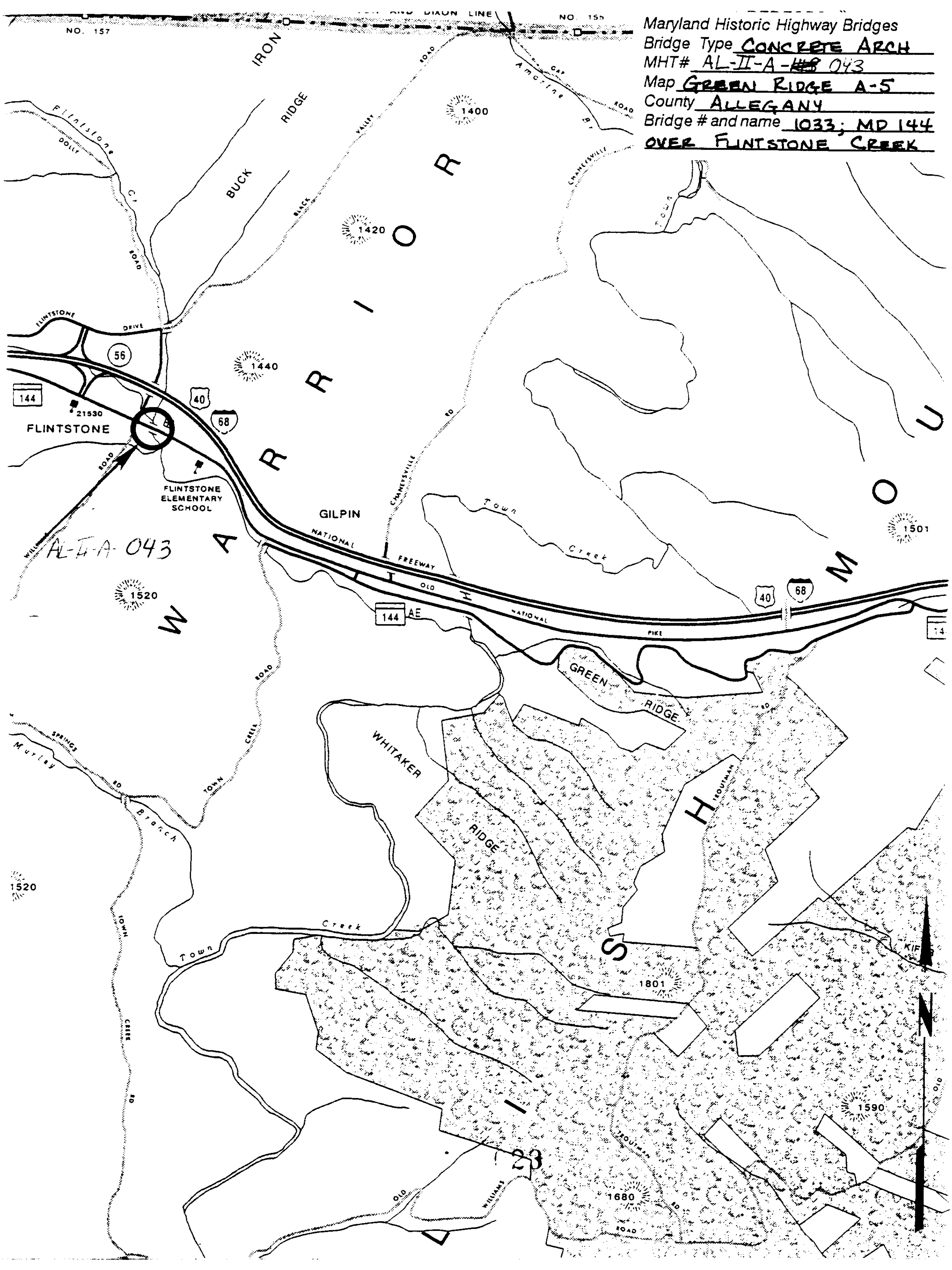
Tyrrell, H. Grattan
1909 *Concrete Bridges and Culverts for Both Railroads and Highways*. The Myron C. Clark Publishing Company, Chicago and New York.

AL-II-A-043

SURVEYOR:

Date bridge recorded December 1997
Name of surveyor Wallace, Montgomery & Associates / P.A.C. Spero & Company
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670
Revised by P.A.C. Spero & Company, July 1998.

Maryland Historic Highway Bridges
Bridge Type Concrete Arch
MHT# AL-II-A-~~#8~~ 043
Map Green Ridge A-5
County Allegany
Bridge # and name 1033; MD 144 over Flintstone Creek



1. AL-11-A-043
2. MD 144 (National Pike) over Flintstone Creek
3. Allegany Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking downstream
8. 1 of 4

1. AL-II-A-043
2. MD 144 (National Pike) over Flintstone Creek
3. Allegany Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking upstream
8. 2 of 4

1. AL-11-A-043
2. MD 144 (National Pike) over Flintstone Creek
3. Allegany Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking East
8. 4 of 4

1. AL-11-A-043
2. MD 144 (National Pike) over Flintstone Creek
3. Allegany Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking West
8. 3 of 4

FLINTSTONE BRIDGE OVER OLD ROUTE 40

AL-II-A-043
Flintstone
ca. 1830

The Flintstone Bridge over Old Route 40 in Flintstone became part of the famous first National Road of the United States. It was constructed of wood ca. 1830, progressed to a stone structure, then finally was strengthened structurally with the addition of the current concrete span. Flintstone Creek lies approximately 15 feet under the bridge during normal discharge.

MARYLAND HISTORICAL TRUST

0101203417

AL-II-A-043

INVENTORY FORM FOR STATE HISTORIC SITES SURVEY

1 NAME

HISTORIC

Flintstone Bridge over Old Route 40

AND/OR COMMON

2 LOCATION

STREET & NUMBER

Old Route 40

CITY, TOWN

Flintstone X VICINITY OF

CONGRESSIONAL DISTRICT

Sixth

STATE

Maryland

COUNTY

Allegany

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	X PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
__BUILDING(S)	__PRIVATE	__UNOCCUPIED	__COMMERCIAL	__PARK
X STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	__PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	X YES: UNRESTRICTED	__INDUSTRIAL	X TRANSPORTATION
		__NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME

Maryland State Highway Administration Telephone #: 729-1600

STREET & NUMBER

CITY, TOWN

Annapolis __ VICINITY OF

STATE, zip code

Maryland

5 LOCATION OF LEGAL DESCRIPTION

Liber #:

Folio #:

COURTHOUSE, REGISTRY OF DEEDS, ETC.

Allegany County Courthouse

STREET & NUMBER

30 Washington Street

CITY, TOWN

Cumberland,

STATE

Maryland

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

DATE

__FEDERAL __STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS

CITY, TOWN

STATE

AL-II-A-043

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
_EXCELLENT	_DETERIORATED	_UNALTERED	X ORIGINAL SITE
X GOOD	_RUINS	X ALTERED	_MOVED DATE_____
_FAIR	_UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The bridge over Old Route 40 in Flintstone represents one of the few remaining stone arch bridges originally built for the National Road. This particular one crosses Flintstone Creek and is approximately 50 feet long and 18 feet wide. The bridge was originally a one span stone structure composed of tightly fitting sandstone blocks. The inside arch is composed of the original bricks. A 15 foot distance lies between the top of the brick arch and the waters of Flintstone Creek during normal discharge. An exterior concrete casing was later added for the strength necessary to support the weight of modern motor vehicles. Concrete railings were also added along the top of the bridge.

The Flintstone Bridge over Route 40 currently stands structurally sound and is in good condition.

CONTINUE ON SEPARATE SHEET IF NECESSARY

AL-II-A-043

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION	
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE	
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE	
__1600-1699	X ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN	
__1700-1799	__ART	X ENGINEERING	__MUSIC	__THEATER	
X 1800-1899	__COMMERCE	X EXPLORATION/SETTLEMENT	__PHILOSOPHY	X TRANSPORTATION	
__1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)	
		__INVENTION			

SPECIFIC DATES ca. early 19th century BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Transportation is the key to the significance of the bridge over Old Route 40 in Flintstone. Although the Cumberland Road ran the distance of Hancock to Cumberland, it fell under the general domain of the National Road which linked Cumberland and Wheeling, W. Va. The bridge itself was constructed circa 1830 and was originally a wood structure with a walkway underneath. It later progressed to a stone structure, then to the present sturdy concrete bridge.

CONTINUE ON SEPARATE SHEET IF NECESSARY

AL-I-A-013

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Allegany County Land Records, Cumberland, Maryland

CONTINUE ON SEPARATE SHEET IF NECESSARY

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY _____

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE COUNTY

STATE COUNTY

11 FORM PREPARED BY

NAME / TITLE
John Nelson, Joan Baldwin & Steve Beale

ORGANIZATION
Allegany County Historic Sites Survey

DATE
11/8/76

STREET & NUMBER
507 National Highway

TELEPHONE
777-8991

CITY OR TOWN
LaVale,

STATE
Maryland

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature, to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 Supplement.

The Survey and Inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

RETURN TO: Maryland Historical Trust
The Shaw House, 21 State Circle
Annapolis, Maryland 21401
(301) 267-1438

PS-1108

INVENTORY NO. AL-II-A-043

DATE: 9/29/76

REMODELING: Drastic, moderate, minor

NAME OF PROPERTY: FLINTSTONE BRIDGE OVER OLD RT. 40

LOCATION OF PROPERTY: OLD RT. 40, FLINTSTONE

DIRECTION DWELLING FACES: EAST - WEST

NAME OF OWNER: MARYLAND STATE HIGHWAY ADMINISTRATION

ADDRESS: ANAPOLIS MARYLAND 729-1600

STORIES: 1( ) 2( ) 3( ) 4( ) 5( ) 6( ) BAYS: 1( ) 2( ) 3( ) 4( ) 5( ) 6( ) 7( ) ( )

WINGS, ADDITIONS:

Dwelling Shape: (square, cross, rectangular)

WALL CONSTRUCTION:

STONE FOUNDATION WITH ORIGINAL BRICK ARCH - 15 feet from creek to top of Arch

( ) FRAME: Bevel, clapboard, weatherboard, wood shingles, board & batten (type?)
(✓) BRICK: Bond type- common, English, Flemish. Sketch variants.
(✓) STONE: Bond type- rubble, ashlar (random or regular), quoins-plain, rusticated
( ) LOG
( ) Other: Coverings CONCRETE

WALL FEATURES: BELT COURSE, PILASTERS, OTHERS _____
FOUNDATIONS: HIGH, LOW, BRICK, STONE
WATER TABLE: NONE, PLAIN, BEVELED, MOULDED BRICK

WINDOWS, TRIM, SHUTTERS: 1/1( ) 2/2( ) 6/6( ) 9/6( ) 9/9( ) other( )
pegged ( ) nailed( ) wide ( ) narrow ( ) mitred ( ) pediment ( )

ENTRANCE, DOORS: LOCATION: _____
HARDWARE: original( ) replaced( )
FAN LIGHT, TRANSOM, SIDE LIGHTS, PLAIN
Paneled, Verticle, Horizontal Boards

CORNICE, BARGE, EAVES: (crown, fascia, soffit, bed)
original( ) replaced( ) Rafter Ends, Modillions, Dentils, Frieze, Architrave

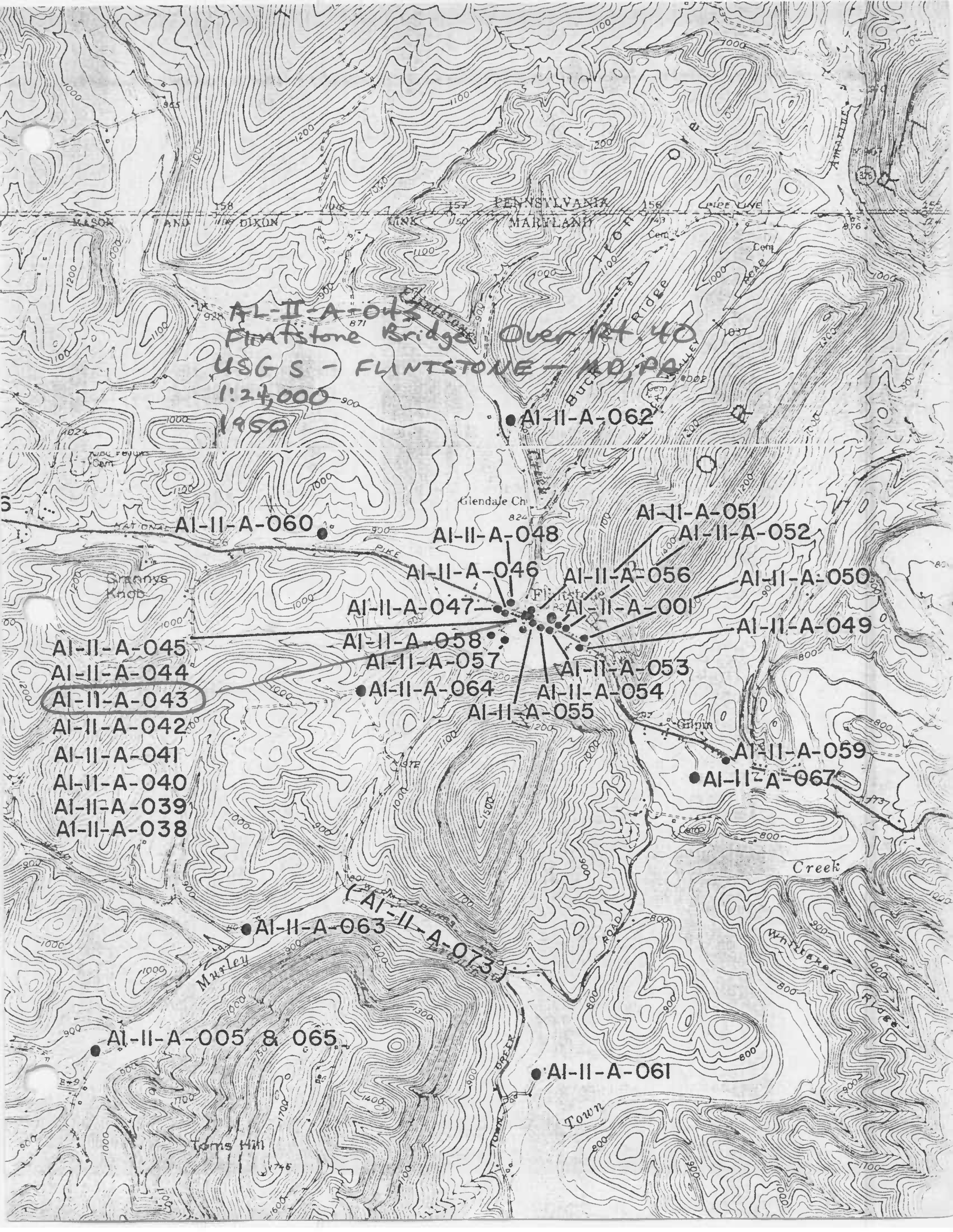
ROOF: GABLE FRONT, GABLE FLANK, HIP, SHED, MANSARD, GAMBREL, FLAT, DORMERS #_____
MATERIAL: wood shingles, slate, tin, asphalt original( ) replaced( )

PORCHES: SHAPE OF ROOF - shed( ) hip( ) gable( )

CHIMNEYS: NUMBER_____ BRICK( ) STONE( ) CORBELED( ) original( ) replaced ( )
LOCATION: Flush end( ) Inside end( ) Outside end( ) Central( ) Interior ( )

ARCHES: Door and window: Keystone, Flat, Segmental, Semicircular

COMMENTS:
Use - Bridge
Significance - One of few remaining of National Road in County
Date Constructed - prior to 1850
Condition - Good



AL-II-A-043
Flintstone Bridge Over Rt. 40
USGS - FLINTSTONE - MD, PA.
1:24,000
1950
PENNSYLVANIA
MARYLAND
MASON
AND
DIXON
LINE
PIPE LINE
Glendale Ch
NATIONAL
PIKE
Grannys Knob
Gilpin
Creek
Murley
Toms Hill
Town
AI-II-A-062
AI-II-A-060
AI-II-A-048
AI-II-A-051
AI-II-A-052
AI-II-A-046
AI-II-A-056
AI-II-A-050
AI-II-A-047
AI-II-A-001
AI-II-A-049
AI-II-A-058
AI-II-A-057
AI-II-A-053
AI-II-A-045
AI-II-A-044
AI-II-A-043
AI-II-A-042
AI-II-A-041
AI-II-A-040
AI-II-A-039
AI-II-A-038
AI-II-A-064
AI-II-A-054
AI-II-A-055
AI-II-A-059
AI-II-A-067
AI-II-A-063
(AI-II-A-073)
AI-II-A-005 & 065
AI-II-A-061

Flintstone Bridge Over Route 40

AL-II-A-043

Old Rt. 40 in Flintstone

John Nelson

9/21/76

Northeast